

Notice of Allowability	Application No.	Applicant(s)	
	09/579,276	FRAZER ET AL.	
	Examiner	Art Unit	
	Mary A. El-Shammaa	2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Response filed 2-02-2004.
2. ☒ The allowed claim(s) is/are 1-44.
3. ☒ The drawings filed on 25 May 2000 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____. |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

DETAILED ACTION

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
2. Authorization for this examiner's amendment was given in a telephone interview with Mr. Timothy Joyce on April 16, 2004.
3. The application has been amended as follows:
4. Claim 1 has been amended to read:
 1. An apparatus for delivering ions to a vacuum chamber comprising:
an enclosing ionization chamber including an ionization region and a vacuum interface at a vacuum interface voltage, wherein the vacuum interface allows the ionization chamber to communicate with the vacuum chamber;
providing first, second and third electric field regions in the ionization chamber and transporting the ions through the first, second, and third electric field regions and into the vacuum chamber;
an electrospray assembly at approximately ground potential having a dispensing end disposed within the ionization chamber;
a first electrode disposed sufficiently close to the dispensing end at a first electrode voltage of sufficiently high magnitude to form ions in the ionization region and to attract the

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ions from the ionization region;

a second electrode disposed in the ionization chamber at a second electrode voltage that repels the ion to a greater degree than the first electrode voltage; and

means for generating a gaseous stream in a gas flow path extending from the first electrode to the second electrode, wherein the gaseous stream provides the ion with sufficient velocity to overcome repulsion by the second electrode,

wherein the vacuum interface voltage is more attractive to the ion than the second electrode voltage.

5. Claim 23 has been amended to read:

23. A method for delivering ions to a vacuum chamber comprising:

(a) providing:

(i) an enclosed ionization chamber including an ionization region;

(ii) *providing first, second and third electric field regions in the ionization chamber and transporting the ions through the first, second, and third electric field regions and into the vacuum chamber;*

(iii) an electrospray assembly having a dispensing end at approximately ground potential disposed within the ionization chamber; and

(iv) a vacuum interface that provides communication between the ionization chamber and the vacuum chamber;

(b) injecting a sample from the electrospray assembly into the ionization region;

(c) charging a first electrode within the ionization chamber to a sufficiently high ion-

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attractive voltage to produce a sample ion in the ionization region;

(d) producing gas flow in a path extending from the first electrode to a second electrode having a second electrode voltage to transport the ion away from the first electrode and past a second electrode, wherein the second voltage is more repulsive to the ion than the first electrode voltage; and

(e) maintaining the vacuum interface at an interface voltage that is more attractive to the ion than the second electrode voltage such that the sample ion travels through the vacuum interface and into the vacuum chamber.

Allowable Subject Matter

6. Claims 1-44 are allowed.

7. The following is an examiner's statement of reasons for allowance: The prior art fails to teach or fairly suggest, in addition to the accompanying features of independent claims 1, 23, and 44, first, second, and third electric fields regions being provided in an ionization chamber and transporting the ions through the first, second, and third electric field regions and into a vacuum chamber. Claims 2-22 and 24-43 are allowable by virtue of their dependency.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion


8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (6,534,764, 6,455,845, 6,204,500, 6,157,030, 6,147,345, and 5,614,711, all of which pertain to ion delivery systems).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mary A. El-Shammaa whose telephone number is 571.272.2469. The examiner can normally be reached on M-F (8:30am-5:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on 571.272.2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MAE
April 19, 2004


NIKITA WELLS
PRIMARY EXAMINER

04/19/04